



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/700,375	01/04/2001	Eckhard Puerkner	646-115	4059
423	7590	11/22/2005	EXAMINER	
HENKEL CORPORATION THE TRIAD, SUITE 200 2200 RENAISSANCE BLVD. GULPH MILLS, PA 19406			GOFF II, JOHN L.	
			ART UNIT	PAPER NUMBER
			1733	

DATE MAILED: 11/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/700,375

Applicant(s)

PUERKNER ET AL.

Examiner

John L. Goff

Art Unit

1733

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 September 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,13-15,18,26,28-30,32-37,39-42,44-47,49-53 and 55-60 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,13-15,18,26,28-30,32-37,39-42,44-47,49-53,55 and 56 is/are rejected.
- 7) ☒ Claim(s) 57-60 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This action is in response to the amendment filed on 9/19/05.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 102/103

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).
4. Claims 1, 13-15, 18, 26, 28-30, 32-37, 39-42, 44-47, 49-53, 55, and 56 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Fischer et al. (WO 94/13726 with U.S. Patent 6,339,735 used as a translation).

Fischer et al. disclose water-soluble hot melt adhesives comprising one or more nonionic polyurethanes useful for bonding paper, wall coverings, labels, etc (Column 2, lines 37-40 and Column 3, lines 12-13 and Column 6, lines 1-5). Fischer et al. teach the polyurethane hot melt adhesives are formed from reaction mixtures comprising at least one polyisocyanate (NCO-terminated oligomer), e.g. tetramethyl xylylene diisocyanate (TMXDI), and a polyol, e.g.

Art Unit: 1733

polyethylene glycol (polyalkylene glycol) or copolymer of ethylene oxide (polyalkylene oxide), and Fischer et al. teach the mixture may further comprise additional polyols such as hydrophobic diols, e.g. 1, 10-decanediol, 1,12-dodecanediol, etc., or amines (Column 3, lines 18-65 and Column 4, lines 1-54 and Column 5, lines 1-25 and the examples). Fischer et al. teach the polyurethane adhesives have a molecular weight greater than 10,000, melt viscosities greater than 400 mPas at 175 °C, and a crystallinity of at least 20% of the value measured for polyethylene glycol with a molecular weight of 6,000 (Column 2, line 45 and 49-59 and Column 5, lines 54-62).

Regarding claims 1, 32, and 35, Fischer et al. teach applying the adhesive as a hot melt or as a dispersion (See the abstract and Column 11, lines 22-53), and thus, application as a hot melt would inherently require application in molten form. Further, it would have been obvious to one of ordinary skill in the art at the time the invention was made that application of the adhesive as a hot melt as taught by Fischer et al. would have been well taken as applying the adhesive as a flowable melt, i.e. in molten form.

Regarding claims 1, 14, 26, and 29, Fischer et al. are silent as to measuring all specific properties of the adhesives such as solubility, upper cloud point, and open time. However, it is noted that many of the examples taught by Fischer et al. teach a polyurethane adhesive comprising the same materials, i.e. polyethylene glycol and TMXDI, as the example taught in applicants specification such that it appears it would intrinsically flow that the polyurethane hot melts taught by Fischer et al. have the claimed values for the specific adhesive properties. Furthermore, it is noted Fischer et al. teach a number of polyisocyanates and polyols that correspond with those taught by applicant (See Column 3, lines 12-67 and Column 4, lines 1-54

Art Unit: 1733

of Fischer et al. and page 10-13 of applicants specification) such that one of ordinary skill in the art at the time the invention was made would have readily expected that the polyurethane hot melt adhesives taught by Fischer et al. would have intrinsically had the specified properties. It should be noted that the office is not equipped to perform processes of the prior art and obtain products and test the same. Applicant is advised that as such there appears to be sufficient evidence provided to shift the burden upon applicant to test to show that the prior art composition does not possess the related properties.

Regarding claims 1, 26, 32, 39, 40, and 44, Fischer et al. teach using the water-soluble hot melt adhesive to bond paper which would have encompassed hygiene papers such as paper towels. In any event, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the water-soluble hot melt adhesive taught by Fischer et al. to bond hygiene papers together as Fischer et al. are generally directed to the bonding of paper and only the expected results would be achieved.

Regarding claims 33, 49, 55, and 56, as noted above Fischer et al. teach the molar ratio of polyol to polyisocyanate is in the vicinity of 1:1, e.g. 1:0.95, (Column 4, lines 55-59) such that it appears a 1:0.91 ratio as claimed is in the vicinity of 1:1 and the limitation is met. In any event, it would have been obvious to one of ordinary skill in the art at the time the invention was made to experimentally determine/optimize the molar ratio of polyol to polyisocyanate as a function of the adhesive strength, solubility, etc. as doing so would have required nothing more than ordinary skill and routine experimentation.

Claim Rejections - 35 USC § 103

5. Claims 1, 13-15, 18, 26, 28-30, 32-37, 39-42, 44-47, 49-53, 55, and 56 are rejected under 35 U.S.C. 103(a) as being unpatentable over the admitted prior art (Specification pages 1-3) in view of either one of Fischer et al. or Chem KK (JP 54-1347 and the English translation).

The admitted prior art discloses it is well known in the art to bond together hygiene papers using a water-soluble adhesive. The admitted prior art teaches that while it is advantageous/desirable for the adhesive to be completely water-soluble, the admitted prior art is silent as to a particular adhesive that is completely water-soluble (Page 1, lines 22-26 and Page 2, lines 1-5 and 19-30 and Page 3, lines 1-5). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use as the water soluble adhesive taught by the admitted prior art any of the well known and conventional adhesives in the art that are completely water soluble such as those suggested by either one of Fischer et al. or Chem KK as only the expected results would be achieved.

Fischer et al. is described in full detail above.

Chem KK disclose completely water-soluble hot melt adhesives comprising one or more nonionic polyurethanes useful for bonding together cotton, jute, cloth, etc. Chem KK teach the polyurethane hot melt adhesives (molecular weight greater than 7,000) comprise at least one polyisocyanate (NCO-terminated oligomer), e.g. trimethyl hexamethyl diisocyanate, and a polyol, e.g. polyoxyalkylene glycol (polyalkylene glycol) having a molecular weight of 400-10,000, and Chem KK teach the polyurethane may further comprise additional polyols such as hydrophobic diols, e.g. propylene glycol, or monofunctional amines (Page 2, lines 12-20 and Page 3, lines 15 and the example).

Art Unit: 1733

Regarding claims 1, 32, and 35, Fischer et al. teach applying the adhesive as a hot melt or as a dispersion (See the abstract and Column 11, lines 22-53), and thus, application as a hot melt would inherently require application in molten form. Further, it would have been obvious to one of ordinary skill in the art at the time the invention was made that application of the adhesive as a hot melt in the admitted prior art as modified by Fischer et al. would have been well taken as applying the adhesive as a flowable melt, i.e. in molten form. Chem KK disclose applying the adhesive in molten form (Page 3, lines 16-19).

Regarding claims 1, 14, 15, 26, 29, and 30, the admitted prior art as modified by either one of Fischer et al. or Chem KK are silent as to measuring all specific properties of the adhesives such as solubility, upper cloud point, and open time. However, it is noted that many of the examples taught by Fischer et al. teach a polyurethane adhesive comprising the same materials, i.e. polyethylene glycol and TMXDI, as the example taught in applicants specification such that it appears the polyurethane hot melts taught by the admitted prior art as modified by Fischer et al. have the claimed values for the specific adhesive properties. Furthermore, it is noted both Fischer et al. and Chem KK teach a number of polyisocyanates and polyols that correspond with those taught by applicant (See Column 3, lines 12-67 and Column 4, lines 1-54 of Fischer et al. and Page 2, lines 16-20 and Page 3, lines 1-7 of Chem KK English translation and page 10-13 of applicants specification) such that one of ordinary skill in the art at the time the invention was made would have readily expected that the polyurethane hot melt adhesives taught by the admitted prior art as modified by either one of Fischer et al. or Chem KK would have intrinsically had the specified properties. It should be noted that the office is not equipped to perform processes of the prior art and obtain products and test the same. Applicant is advised

Art Unit: 1733

that as such there appears to be sufficient evidence provided to shift the burden upon applicant to test to show that the prior art composition does not possess the related properties.

Regarding claims 33, 49, 55, and 56, as noted above Fischer et al. teach the molar ratio of polyol to polyisocyanate is in the vicinity of 1:1, e.g. 1:0.95, (Column 4, lines 55-59) such that it appears a 1:0.91 ratio as claimed is in the vicinity of 1:1 and the limitation is met. In any event, it would have been obvious to one of ordinary skill in the art at the time the invention was made to experimentally determine/optimize the molar ratio of polyol to polyisocyanate as a function of the adhesive strength, solubility, etc. as doing so would have required nothing more than ordinary skill and routine experimentation.

Allowable Subject Matter

6. Claims 57-60 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. The following is a statement of reasons for the indication of allowable subject matter:

The prior art of record fails to teach or suggest a paper bonded to another paper through a layer of hotmelt polyurethane adhesive wherein the polyurethane is obtained by reacting a polyisocyanate and a polyol at a ratio of OH groups in the polyol to NCO groups in the polyisocyanate of at least 1.3:1.

Response to Arguments

8. Applicant's arguments with respect to claims 1, 13-15, 18, 26, 28-30, 32-37, 39-42, 44-47, 49-53, 55, and 56 have been considered but are moot in view of the new ground(s) of rejection.

Applicants argue, "These differences illustrate that even though Fischer et al. discloses the use of polyethylene glycol and TMXDI, and other material similar to those used by Applicants, to make a hot melt adhesive, the resulting material is not the same as that of Applicants, and does not intrinsically have the properties as claimed by Applicants."

Applicants have not shown the hotmelt adhesives disclosed by Fischer et al. to have different properties than those claimed.

Applicants further argue, "The Office Action states that it would have been obvious to one of ordinary skill in the art to experimentally determine/optimize the molar ratio of polyol to isocyanate "within the vicinity of 1:1." However, as stated above, Applicants claimed minimum ratio is not 1:1, but 1.1:1."

As noted above, Fischer et al. teach the molar ratio of polyol to polyisocyanate is in the vicinity of 1:1, e.g. 1:0.95, such that it appears a 1:0.91 ratio as claimed is in the vicinity of 1:1 and the limitation is met.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

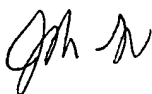
Art Unit: 1733

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **John L. Goff** whose telephone number is **(571) 272-1216**. The examiner can normally be reached on M-F (7:15 AM - 3:45 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571) 272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



John L. Goff



JEFF H. AFTERGUT
PRIMARY EXAMINER
GROUP 1300